The lifetimes and potential change in planetary albedo owing to the oxidation of organic films extracted from atmospheric aerosol by hydroyxl (OH) radical oxidation at the air-water interface of aerosol particles

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We thank the editor for their time and comments, which have helped improve this paper. The suggested text from the editor was very helpful.

Thank you for sending the revised version of your manuscript. Although you have included requested discussion point in the revised manuscript, I feel that the abstract and conclusions can remain ambiguous as to which scenario the results apply to.

As you indicated, the spread aerosol extract likely stems from millions of individual aerosol particles. If the organic materials in the individual particles are not partitioning to the air-water interface, then the lifetime with respect to OH and the optical properties of the aerosol particle and cloud droplet will be different from what is reported. Reading the abstract and conclusion the audience of ACP may be inclined to take the results as generally valid (i.e., a thin film always establishes with measured properties). However, strictly speaking this is only the case if the organic materials in the aqueous aerosol particle and droplet partition to the air-water interface. In this regard the reviewer is correct in pointing this out.

I think minor adjustments can resolve this ambiguity without compromising the results of your study. For example, in abstract on line 5 you could state “Assuming the aerosol extracts reflect thin films on aqueous particles and cloud droplets, modelling….”. In conclusions you could state “…aqueous core-shell systems.”, and “…depending on the ambient hydroxyl radical concentration assuming aqueous particles and cloud droplets”.
Obviously, I will leave it to you to make these minor changes to increase clarification.

We have adopted the Editors very useful corrections and the abstract now has the following text:-

“Assuming the material extracted from atmospheric aerosol produces thin films on aqueous particles and cloud droplets, modelling the oxidation kinetics with KM SUB suggests half-lives of minutes to an hour…”

And the conclusions now has the following text:-

“Optimised KM SUB kinetic models suggested that the atmospheric lifetime of the reactive component of the films studied can vary between minutes and days depending on the ambient hydroxyl radical concentration assuming aqueous particles and cloud droplets.”